# Gene Testing Assignment

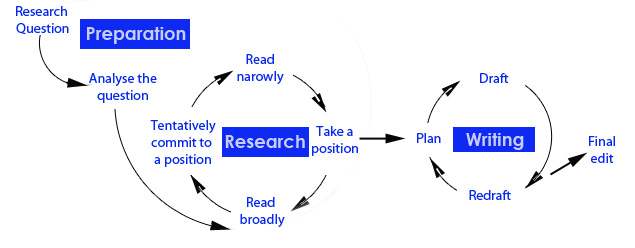
This activity requires you to comprehensively report on a biological issue. An issue is something that people hold different opinions or viewpoints on. There are a number of issues that impact on Australians. In this activity you will be researching an issue related to Gene Testing.

*Genetic testing is the new wave of the future. Geneticists can now tell possible carriers of the gene for a disease their true fate, not just give them odds. Now that we can tell people what genes they will or do have, do we allow people to selectively decide when and whatever they want to know? Do we test the unborn, and if so, then can the parents abort if they are unhappy with the results? How far do we let things go? Is genetic testing really a good ethical procedure? But what if it could also prevent and help cure disease?*

*Our genes hold an encyclopaedia of information about us and, indirectly, about our relatives. Who should be privy to that information? Will a predisposition for cancer, for instance, remain secret - or could the information slip out? The concern is that test results might someday be used against a person. Some people have been denied health insurance, some have lost jobs or promotions, and some have been turned down for adoptions because of their gene status.*

### OVERALL TASK ( 600 words)

You will be required to work in a small group to develop and refine a suitable research question or purpose, based on the issue described above. In your Group you will research Gene Testing in order to answer your question and share resources. You will present your findings in an Individual report.



### CHECKLIST

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* **Task 1** Develop and refine your research question. Submit your research question to your teacher before beginning your research.
* **Task 2** Collecting and processing information.

Make research notes from at least 3 different sources and post on your WIKI page.

Complete 3 Validation of Evidence checklists - one for each of your sources. Post these on your WIKI page.

* **Task 3** Draft Report : Prepare your 600 word report and upload to your WIKI page
* **Task 4** Peer Review the Draft Report of 2 students in your group. Post your comments on their WIKI pages.
* **Task 5** Refine and edit your Draft report taking into consideration feedback from the Peer Review and feedback from your teacher to the class in general. Prepare your Final Report. Print a hard copy and upload electronic copy to your WIKI page.

### DATES:

* **Progress check 1 due date: March 18** Draft Report uploaded to your individual WIKI page
* **Final Report due date is 23 March.** Report must be printed out and hard copy handed in to the Silver Box outside the Science Prep Room. An electronic copy of the Final report must also be uploaded to the individual WIKI page.

# HOW TO BEGIN

# Task 1 – Developing and refining a research question

Develop possible questions, suitable for research, relating to the issue

e.g Who owns your DNA information?

e.g. Should gene testing be compulsory?

e.g. Should you be able to test someone’s DNA without their permission?

e.g. Should DNA testing only be available for disease prevention and cure?

Select and refine **one** question or purpose on which to base your research. This must relate to the biology of Genes and Gene testing. It will help to focus your research.

**Submit your possible questions and your research question or purpose to your teacher for approval before beginning your research**.

# Task 2 – Collecting and processing information

1. Research your chosen question by collecting evidence from at least 3 different Internet sources This information must include biological ideas about Genes and Gene Testing. Also collect and process information on the differing viewpoints that people, groups and/or organisations have expressed about how this issue. Record your evidence in note form on your wiki page

*Make sure you collect enough information to allow you to take a position on the issue. You will be expected to justify your position using information taken. You must also make a recommendation for further action and give reasons for your recommendation.*

1. Use the Validity of Evidence in Internet Sources template on the WIKI to evaluate the information from these 3 sources.
2. Prepare a Bibliography using the conventions outlined in your school diary. Note any sources you did not use and explain why they were unsuitable

Possible sources you may choose to use are:

Evergreen, G. L. (2012). *Science Quest 10 /Australian Curriculum Edition .* John Wiley & Sons .

*Genetic Testing Dilemmas*. <http://www.pbs.org/wgbh/nova/body/genetic-testing-dilemmas-p1.html>

*Personal DNA Testing* <http://www.pbs.org/wgbh/nova/sciencenow/0302/01.html>

*Understanding Gene Testing* . <http://www.accessexcellence.org/AE/AEPC/NIH/>

# Task 3 – Reporting

**Write a comprehensive report on Gene Testing in which you:**

* state your research question or purpose, which must be suitable for research and refined from the issue above;
* identify the biology relating to the Gene testing and the issue you have chosen by making multiple links between relevant biological ideas;
* identify **two** different points of view on the issue supported by evidence i.e. giving reasons why the people, groups and/or organisations hold those viewpoints;
* state your own position on the issue. Use information from your sources to justify why you hold that position, and make a recommendation with reasons for action in the future;

You could use the following suggestions to structure your report;

### Introduction

The introductory paragraphs should include a topic sentence which includes the Thesis **or your position statement** followed by a brief overview of the essay. This is where you inform the reader of what the report is about.

You should state why the issue is personally relevant to you, or say why it is relevant to society.

Next, identify the biology relating to the Gene testing and the issue you have chosen by making multiple links between relevant biological ideas. You should include definitions of words and technical terms that a reader may not be familiar with .

Briefly present the arguments you will be using.

Closing statement- the last sentence of this paragraph should also include a transitional sentence that moves the reader to the first paragraph of the body of the essay.

In summary, the introduction should contain:

* Research statement and overview
* Personal and social relevance
* Definitions (of words, and technical terms)
* Scientific explanations (valid and accurate)
* Closing statement and link to next section

### Body paragraphs

These should consist of the arguments; and the counter-arguments. The best number of arguments is three. Arguments and support should be logically linked and sequenced in a way that makes it easy and interesting to follow your train of thought

**Argument 1 –This should be the most important argument that supports your thesis.**

* Use only one idea/concept per paragraph. If you change ideas, start a new paragraph.
* It should then include the data (facts, statistics, principles, examples, real-life experiences) and the relevant theory (concepts, laws, formulas, quantities, units) that support your thesis
* It should then draw a clear connection to the Research Question ; and most importantly – it should be reasonable and believable .
* The closing sentence ideally should not only sum up the paragraph, but also provide a link to the next argument

**Argument 2 – the second idea that supports the argument for your thesis.**

Same structure as Argument 1 but with further evidence supporting your thesis.

**Argument 3 – the third idea that supports the argument for your thesis.**

Same structure as Argument 1 but with the final evidence supporting your thesis.

**Counter-arguments -**

Explain why some people/groups and/or organisations do not agree with your thesis hold those viewpoints and outline their reasoning.

### Concluding paragraph

The conclusion should be very strong and clear and follow logically from information collected and judgments made and must not introduce new information. Ideally, it would contain four critical points:

1. **Re-state your own position** on the issue using some of the original language or language that "echoes" the original language.
2. **A summary of the main points** from the body of the essay and how they link to this thesis. Use information from your sources to justify why you hold that position
3. **A statement about the counter arguments** or limitations of the arguments.
4. **A final statement** (that signals the discussion has come to an end) and makes a recommendation, with reasons, for action in the future.

**Bibliography. Use the format outlined in your school diary** .

Year 10 Gene Testing Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  | **A** | **B** | **C** | **D** | **E** |
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| **The folio of student work has the following characteristics:** | | | | |
| **Understanding** | Comprehensive description and explanation of scientific information, concepts and relationships | Significant description and explanation of scientific information, concepts and relationships | Description and identification of scientific information and concepts | Statements of scientific information and science knowledge | Makes statements |
| **Skills** | Formulation of questions that can be investigated and , explicitly linked to Gene Testing | Formulation of questions that can be investigated, informed by science knowledge | Formulation of questions that can be investigated scientifically | Statements of questions and hypotheses | Makes statements |
| Identifies at least two different points of view supported by evidence from research  Takes and justifies a position on the issue with a recommendation for further action | Identifies at least two different points of view supported by evidence from research  Takes and justifies a position on the issue. | States a point of view  Takes a position on the issue | Either states a position or takes a point of view | Makes statements |
| Collects and shows evidence of processed information fromat least **three** sources correctly referenced  Systematically evaluates suitability of secondary sources. | Collects and shows evidence of processed information fromat least **three** sources correctly referenced .  Evaluates secondary sources | Collects and shows evidence of processed information fromat least **three** sources.  Referencing mostly correct  Compares secondary sources. | Collects and shows evidence of processed information from **some stated** sources  Makes statements relating to secondary sources | Collects evidence  Superficial statements about secondary sources |
| Clear and purposeful use of appropriate scientific language and representations to concisely communicate findings and ideas to specific audiences | Purposeful use of appropriate scientific language and representations to effectively communicate findings and ideas to specific audiences | Use of appropriate scientific language and representations to communicate findings and ideas to specific audiences | Use of aspects of scientific language and representations to communicate findings and ideas | Use of everyday language to communicate findings and ideas |